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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,764

01/09/2006

Kikuo Maeda

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3405

21171 7590 01/14/2008  
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EXAMINER

CHARLES, MARCUS

ART UNIT

PAPER NUMBER

3682

MAIL DATE

DELIVERY MODE

01/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/563,764		MAEDA ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Marcus Charles		3682	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01-09-2006 &amp; 09-06-2007</u> .                             | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This is the first action relating to serial application number 10/563,764 filed 01/09/2006.

Claims 1-6 are currently

#### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Drawings***

2. The examiner has accepted the drawing filed with this application as formal drawing.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 2-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 2, line 2, the term type render the intended scope of the claims unclear because it is not clear as to what type of shell is term referring to.

#### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Takemura et al. (6,332,714). Takemura et al. discloses a roller bearing comprising an inner raceway

member (10) and an outer raceway (20) prepared from steel plate and a plurality of rollers (30) there between, wherein each outer raceway surface that are subjected to induction hardening and tempering (col. 8, line 6-20) so as to provide excellent cold drawability and improve wear resistance and extended life surface.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama et al. (5,848,846) in view of Takemura et al. (6,332,714). Sugiyama et al. discloses a roller bearing comprising a raceway member (1) prepared from steel plate and a plurality of rollers, wherein the outer raceway surface is subjected to hardening by carbonitriding and tempering by quenching in oil. Sugiyama et al. does not disclose the hardening is by induction hardening and tempering. Takemura et al. discloses a bearing comprising an outer raceway surface and inner raceway surface that are subjected to induction hardening and tempering so as to provide excellent cold drawability and improve wear resistance and extended life surface. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Sugiyama et al. so that the hardening process is carried out by induction hardening in view of Takemura et al. so as to provide excellent cold drawability and improve wear resistance and extended life surface.

In claim 2, note Sugiyama et al. Takemura et al. inherently discloses the claimed invention. Note Sugiyama et al. discloses the annular collar is subjected to hardening.

In claim 3, Sugiyama et al. discloses the outer race having a hardness of 750-800 Hv but fails to disclose the hardness of the inner race. Takemura et al. discloses the raceway surface after hardening is  $H_{RC}$  is 59 (which is equivalent to 727 Hv, and the hardness of the other surface is 78  $H_{RB}$  which is equivalent to 142 Hv. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the outer and inner races such that they have different hardness as set forth in the instant invention, since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 f.2<sup>nd</sup> 272, 205

In claim 5, Takemura et al. clearly shows that the depth of the induction hardened portion is smaller than the plate thickness (see figs. 2).

In claim 6, Takemura et al. discloses the material for the raceway (20) contain from 0.4%-0.9% of Carbon.

8. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over FR (2836965) in view of Takemura et al. Fr (2836965) discloses a thrust roller bearing comprising a raceway member (3/4) prepared from steel plate and a plurality of rollers (1), wherein the outer raceway surface is subjected to hardening by carburizing and tempering. Fr (2836965) does not disclose the hardening is by induction hardening and tempering. Takemura et al. discloses a bearing comprising an outer raceway surface and inner raceway surface that are subjected to induction hardening and tempering so

as to provide excellent cold drawability and improve wear resistance and extended life surface. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Sugiyama et al. so that the hardening process is carried out by induction hardening in view of Takemura et al. so as to provide excellent cold drawability and improve wear resistance and extended life surface.

***Citation***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the prior art cited in attached PTO Form 892.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Art Unit: 3682

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Marcus Charles  
Primary Examiner  
Art Unit 3682  
December 28, 2007